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"Strategic Advice in an Era of Unprecedented Change"

Covid-19 "Vital Signs"

Issue # 264

January 19, 2021

Covid-19 "Vital Signs"

Highlights

- The Institute for Health Metrics and Evaluation (IHME) updated its projections of cases, hospitalizations, and deaths, as of January 15. The projections for the US are remarkably encouraging:
  - **IHME estimates that new daily infections peaked last Saturday and will steadily decline each week through the end of its projection period (May 1)**. For example, new daily cases are projected to drop in half in the next four weeks and a half again four weeks later
  - **Inpatient beds in use for Covid-19 patients are projected to peak on January 30 before falling as well through the projection period.** The Covid-19 census is projected to be cut in half by March 1 and a half again by the end of March
  - **Daily Covid-19 deaths are projected to peak on February 1 and decline after that.** Deaths are also projected to be cut in half by March 1 and a half again by the end of March
- Estimated actual infections in the US are also declining, according to models from Youyang Gu and the Yale School of Public Health:
  - **Gu's model estimates that new daily infections peaked on December 27; Yale's model estimates that these peaked on January 15**
  - **Gu also forecasts that the Reproduction Rate (R_t) has been declining since December 22 and fell below 1.0 on December 29**
  - (Note that the Gu model includes a two-week lag in these estimates; the latest estimates are through January 4)
  - **Both the Gu and Yale models estimate that R_t is below 1 for most states; the estimates are above 1.0 in both models for only Maine, Oregon, and Wyoming**
    - The Yale model does not provide estimates for Alabama, Florida, Massachusetts, and Virginia
    - Of these, the estimate is above 1 in the Gu model for only Virginia
- Testing in the US continues to improve:
  - **Test volume on the Martin Luther King holiday was the fourth-highest recorded since the pandemic began (Sunday's was the second-highest)**
  - The 7-day average test volume was the highest recorded to-date
  - With the high test volume, **the test-positive rate each of the past two days was lower than on any day since November 2**
  - The 7-day test-positive rate as of yesterday was the lowest it has been since November 29
- Newly detected cases continue to decline - worldwide, in the US and in several recently hard-hit countries:
  - **Newly detected cases, both worldwide and in the US, peaked on January 12**
  - New cases peaked in Ireland and the UK on January 10; In Ireland, the new case rate has fallen in half in the past week alone
  - **New cases in Israel peaked on January 14; however, they have yet to drop significantly from this peak**
  - **In "hot-spots" in the US - particularly Arizona and California - rates also have declined over the past several days; Rates in New Jersey and New York have stabilized**
- **Covid-19 hospitalizations have now fallen on ten of the past twelve days**
  - Still, these rates are at alarming levels in Arizona, California, Georgia, and Nevada; rates in Connecticut and New York also are of concern

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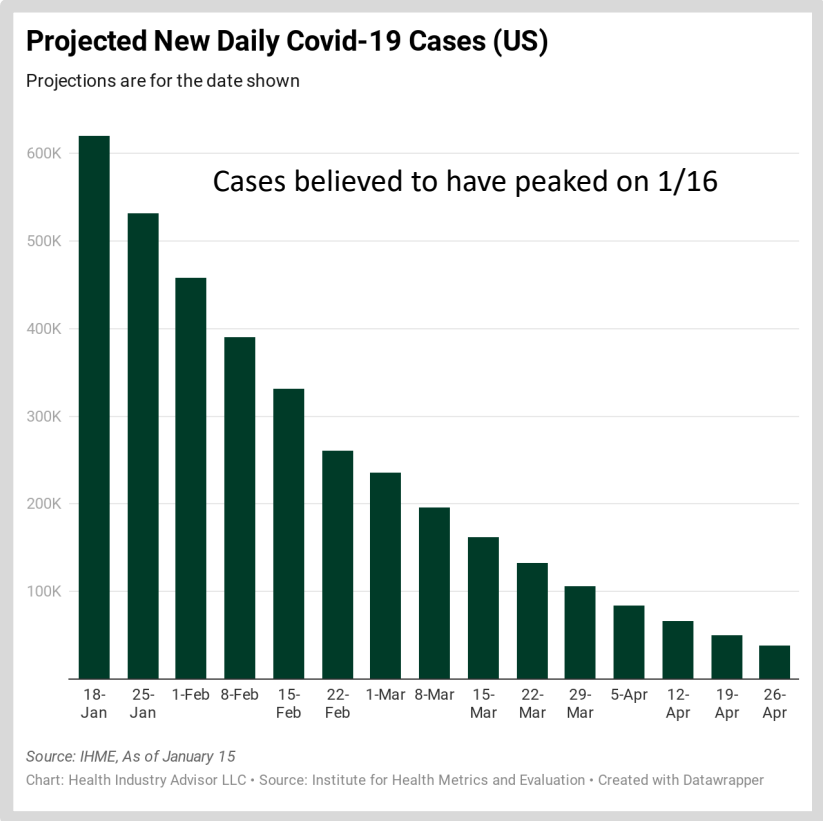
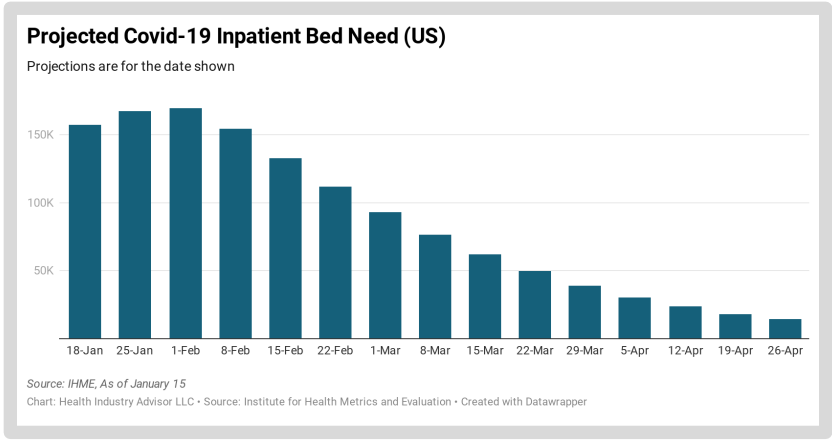
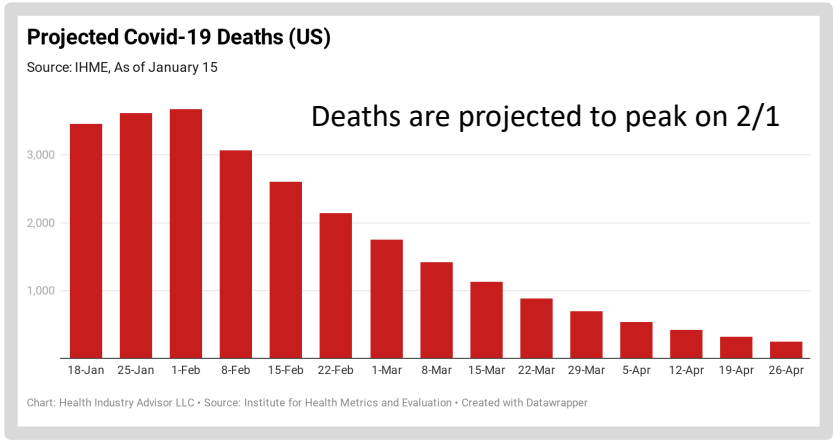
Projected Cases, Hospital Days and Deaths - US

The Institute for Health Metrics and Evaluation (IHME) produced its latest projections on January 15. Cases are thought to have peaked on January 16 and to decline rapidly through the Spring; Hospital use is projected to peak on January 30; Deaths projected to peak on February 1







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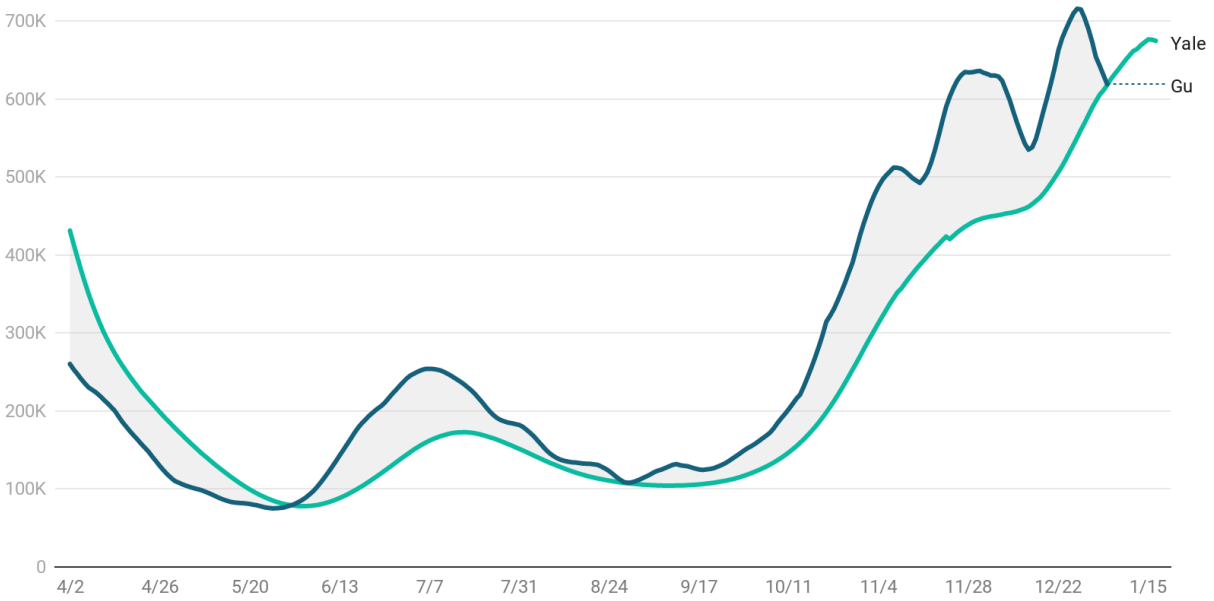
Two Models of Estimated Daily Infections

Models from both Youyang Gu and the Yale School of Public Health suggest that new infections may have peaked, following nearly three-month surge. Gu estimates these peaked on December 27; Yale on January 15

- Two models:
  - Youyang Gu: https://covid19-projections.com
  - Yale School of Public Health: https://covidestim.org
- Gu model lags by two weeks



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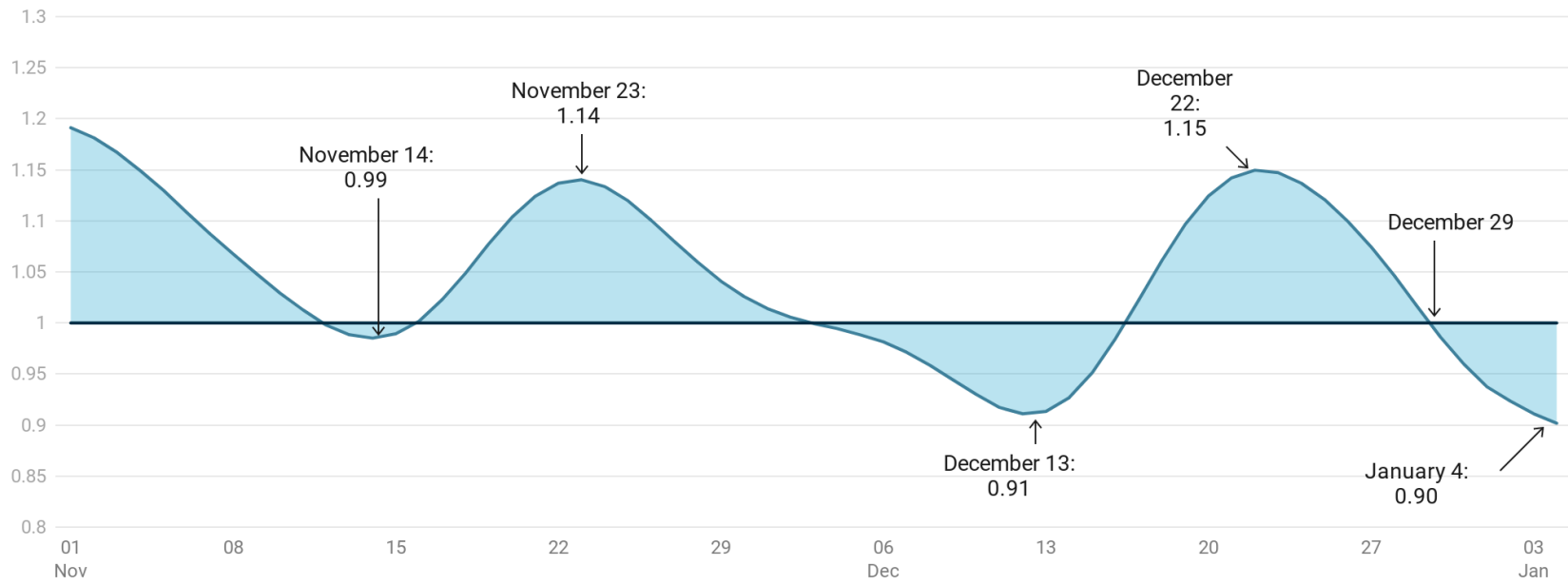
Reproduction Rate (R_t) – Gu* Model

Gu's estimate of R_t reached an intermediate peak on December 22 before declining the next thirteen days; it has been below 1.0 for six successive days



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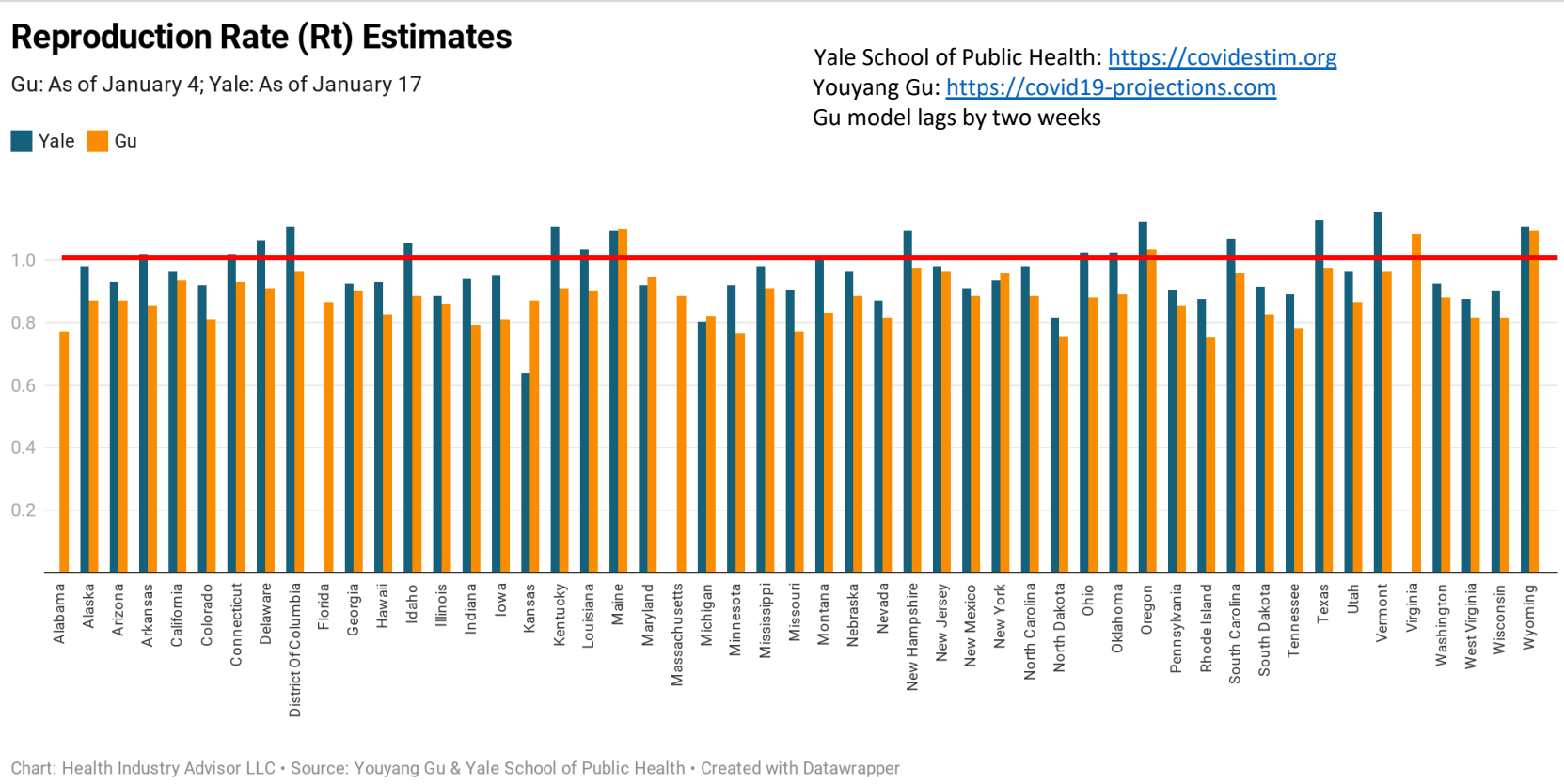
Two Models of Estimated R_t

Models from both Youyang Gu and the Yale School of Public Health suggest that the Reproduction Rate (R_t) in most states is now below 1.0. It is above 1.0 in both models for Maine, Oregon and Wyoming



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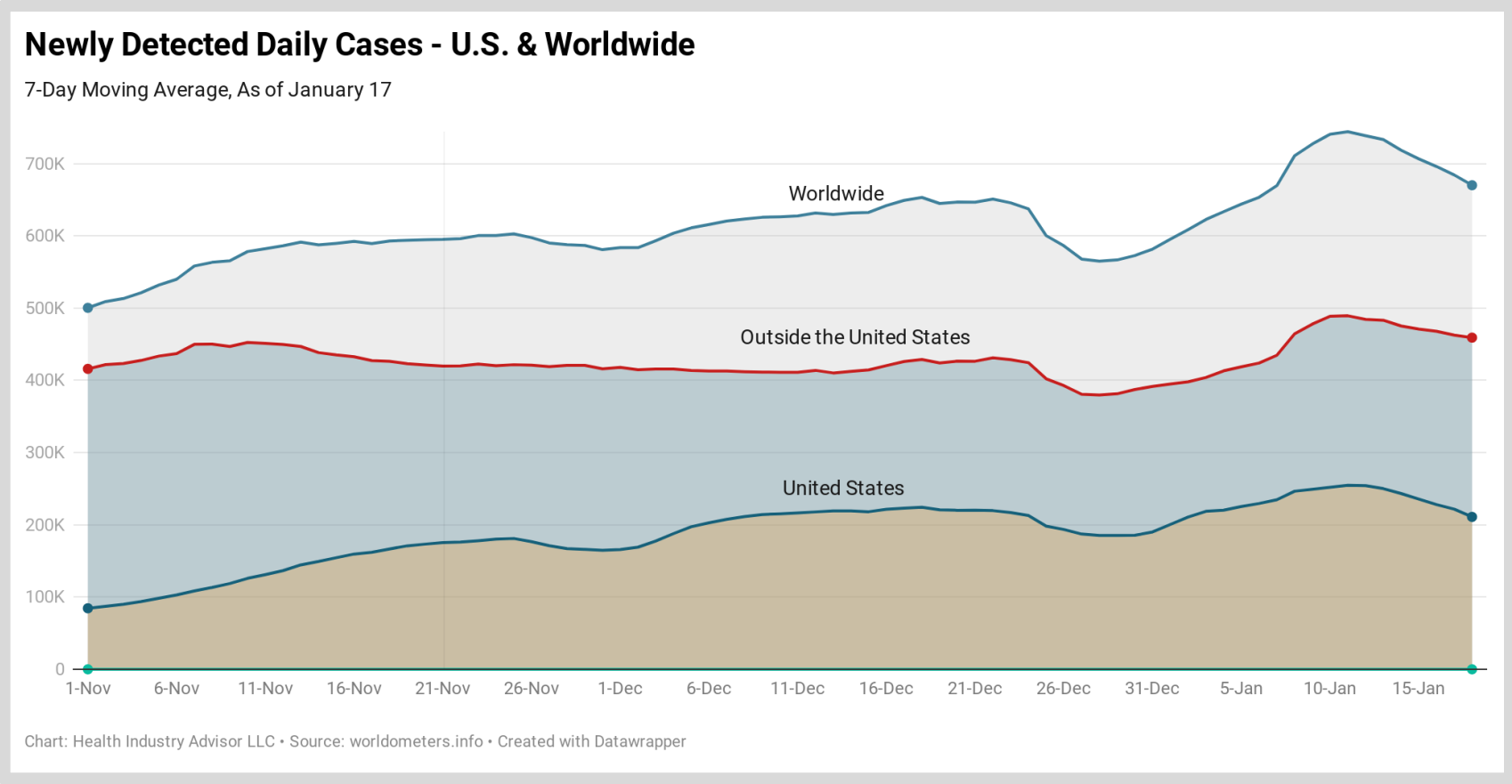
Newly-Detected Cases – US & Worldwide

Newly detected cases have moved past peak, both in the US and worldwide



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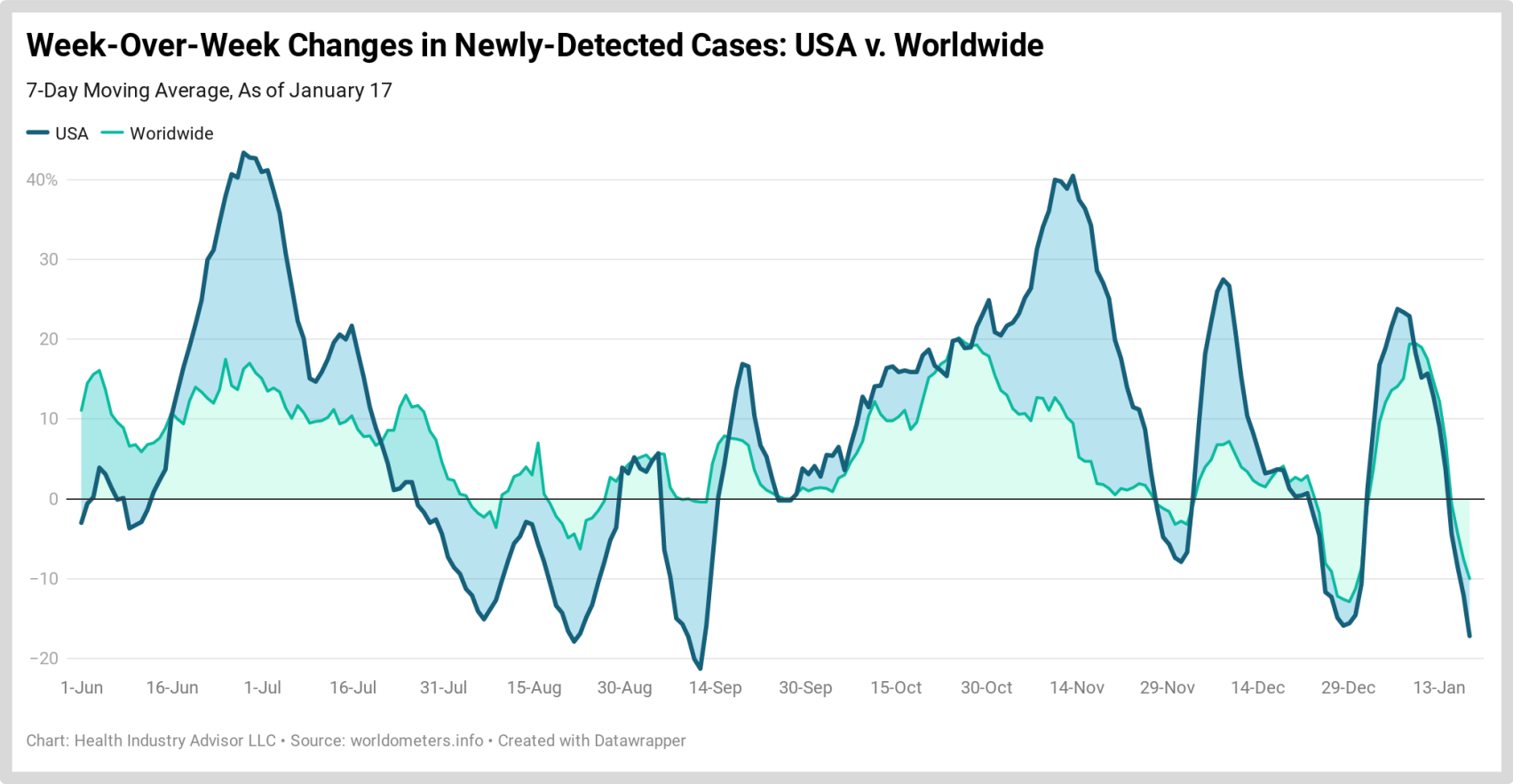
Week-Over-Week Changes in New Cases

The number of new cases is now declining week-over-week, both in the US and worldwide



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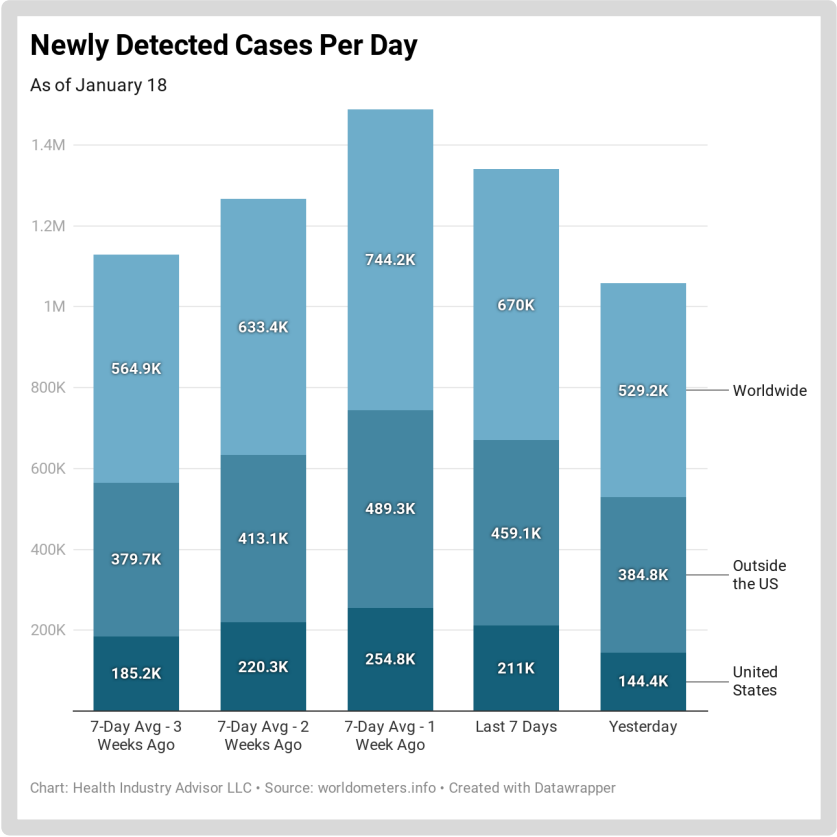
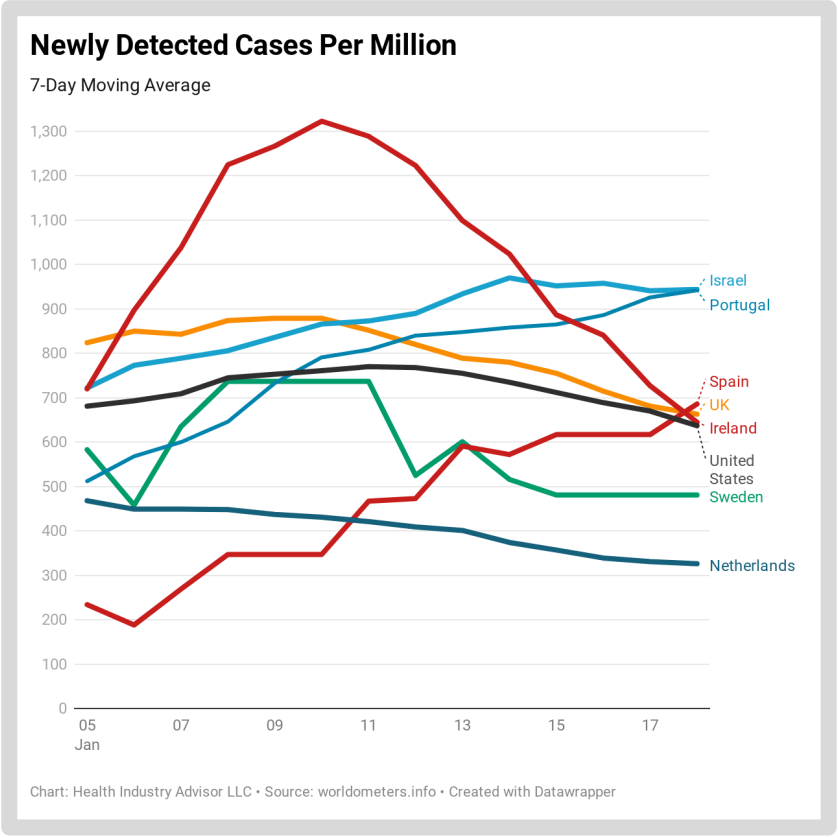
Newly Detected Cases – US and Worldwide

New case rates in Ireland, the UK, and the US are showing continued improvement. The rate in Israel has stabilized. Portugal and Spain are still seeing increasing rates





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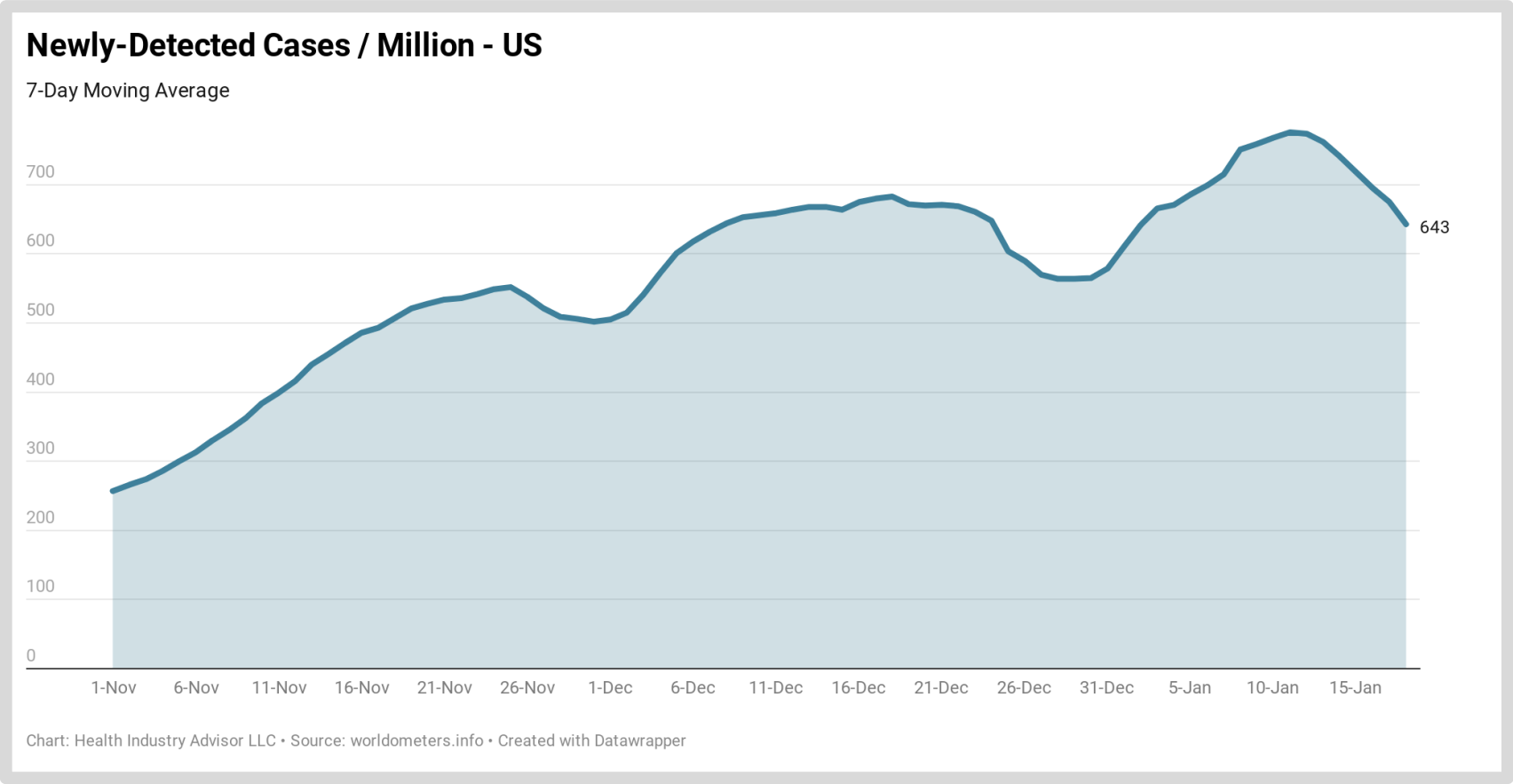
Newly Detected Cases / Million - US

Newly detected cases (7-day average)in the US have now declined on seven successive days. Yesterday's data is likely affected by the Martin Luther King holiday reporting delays; nevertheless, all but three states provided updated data yesterday



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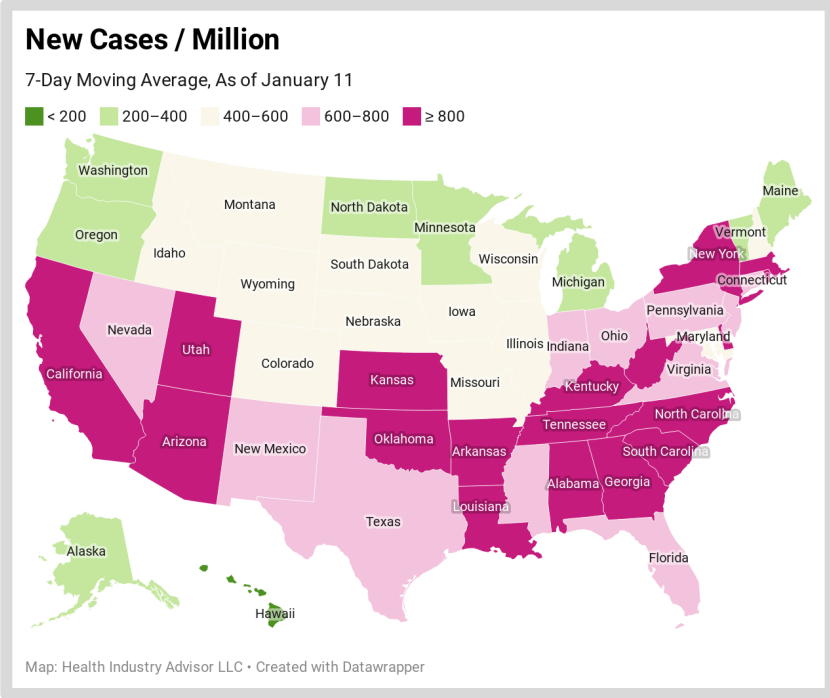
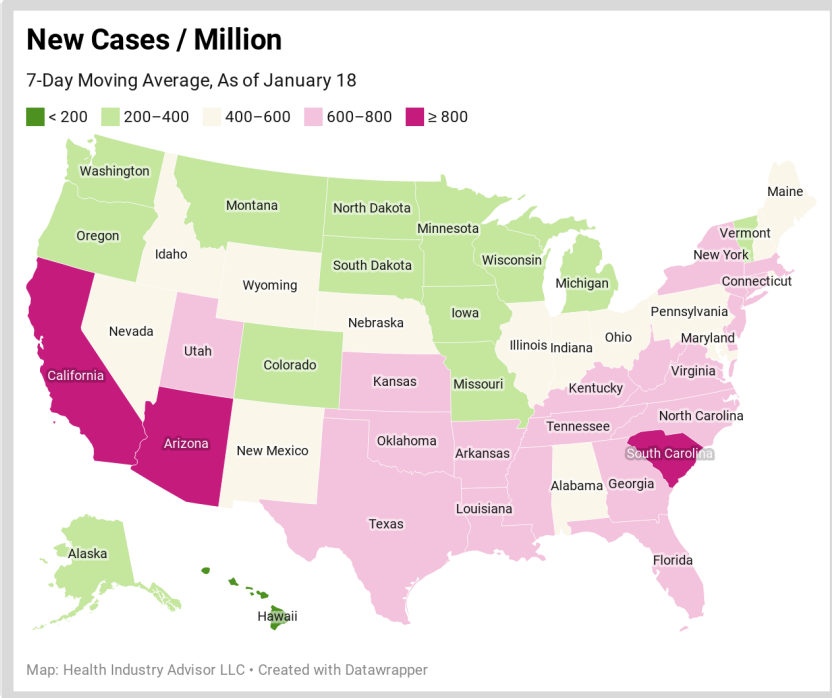
New Cases / Million

In the past week, new case rates have eased in many of the "hot-spot" states; still rates across the South and in the Northeast are too high

January 11	January 18





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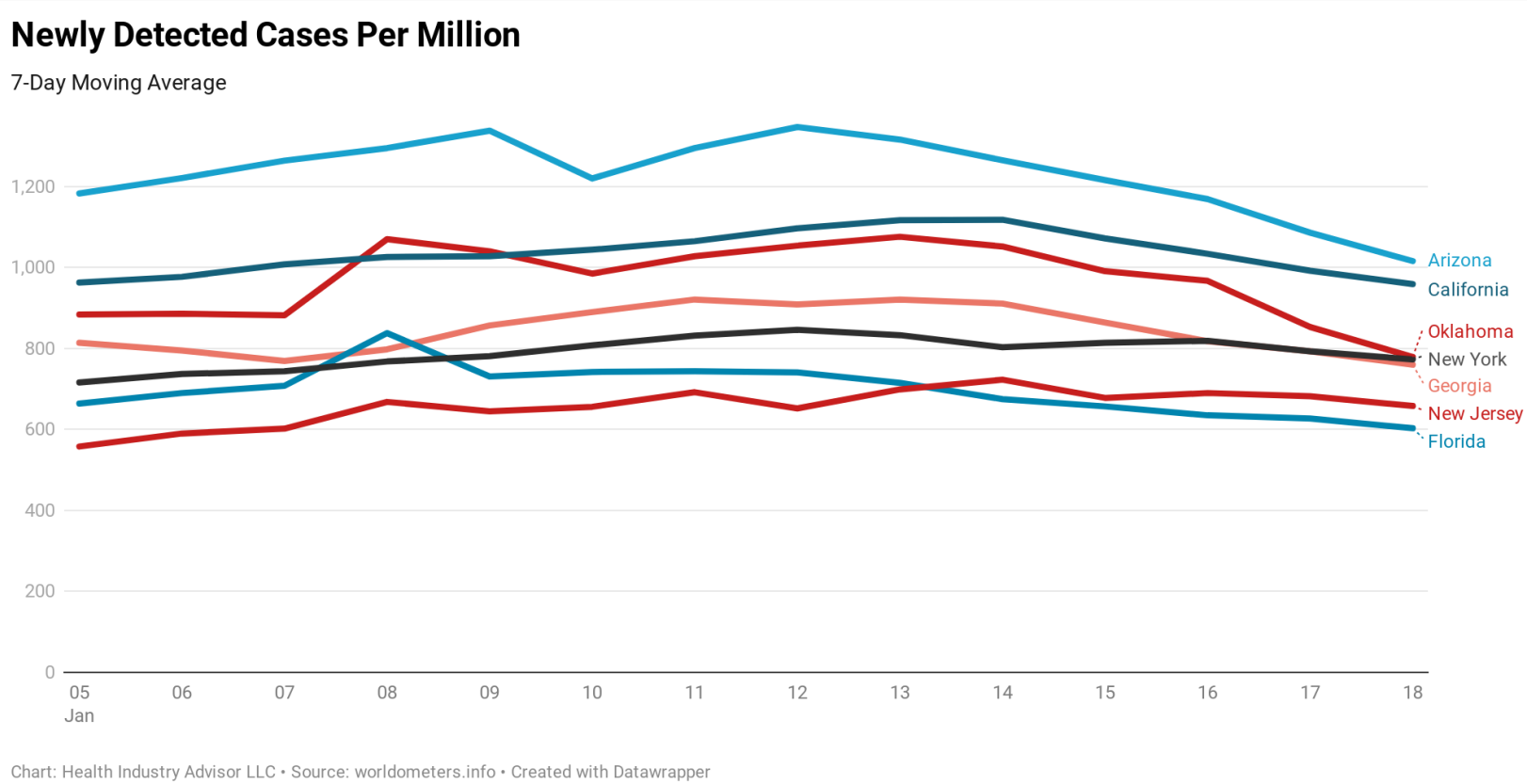
Newly Detected Cases / Million

New case rates continue to decline in several states recently hard hit by surges – Arizona, California and Oklahoma; Rates in New Jersey and New York appear to have stabilized recently. These rates, however, remain at high levels



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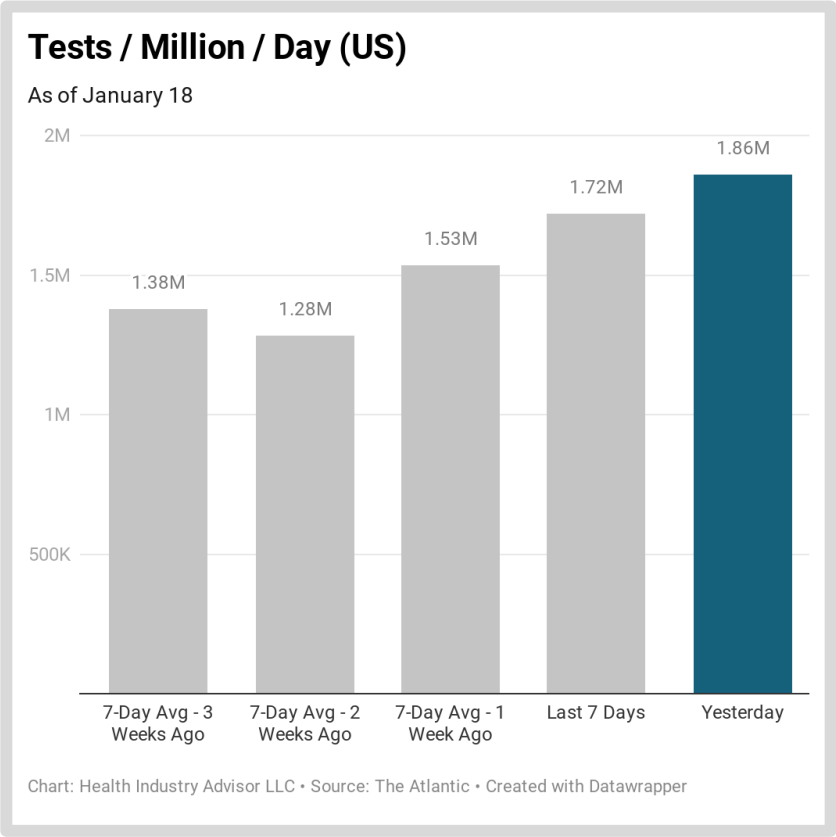
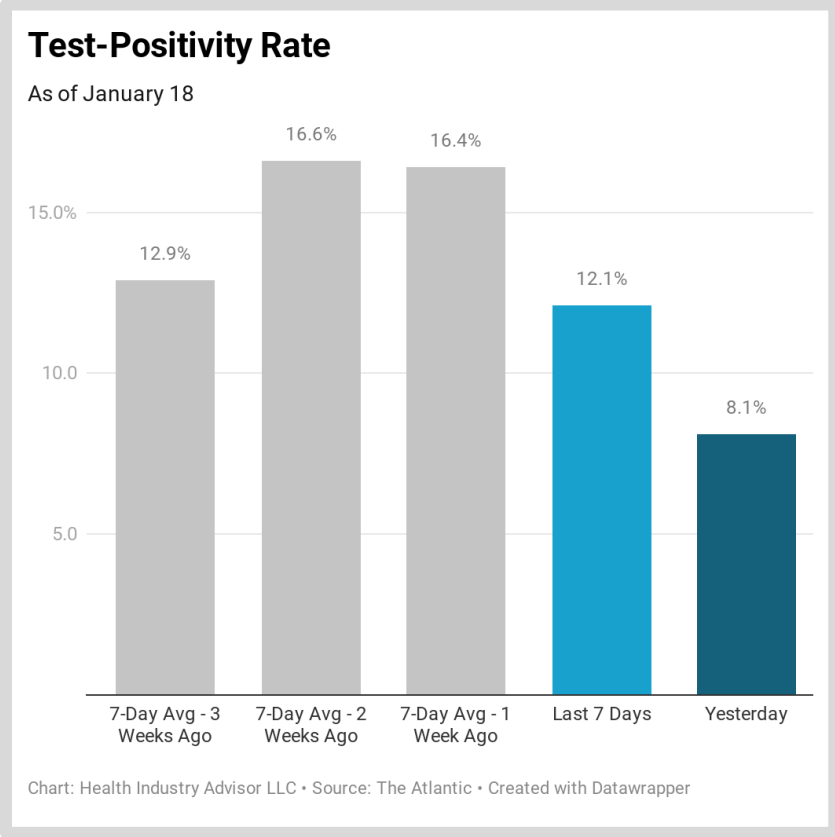
Testing Results - US

Despite the holiday, a significant number of tests were recorded in the US yesterday; as a result, the 7-day average established a new high for the pandemic. With this high volume, the test-positive rate for the day and the past week showed solid improvement – the 7-day rate was as low as it has been since November 29





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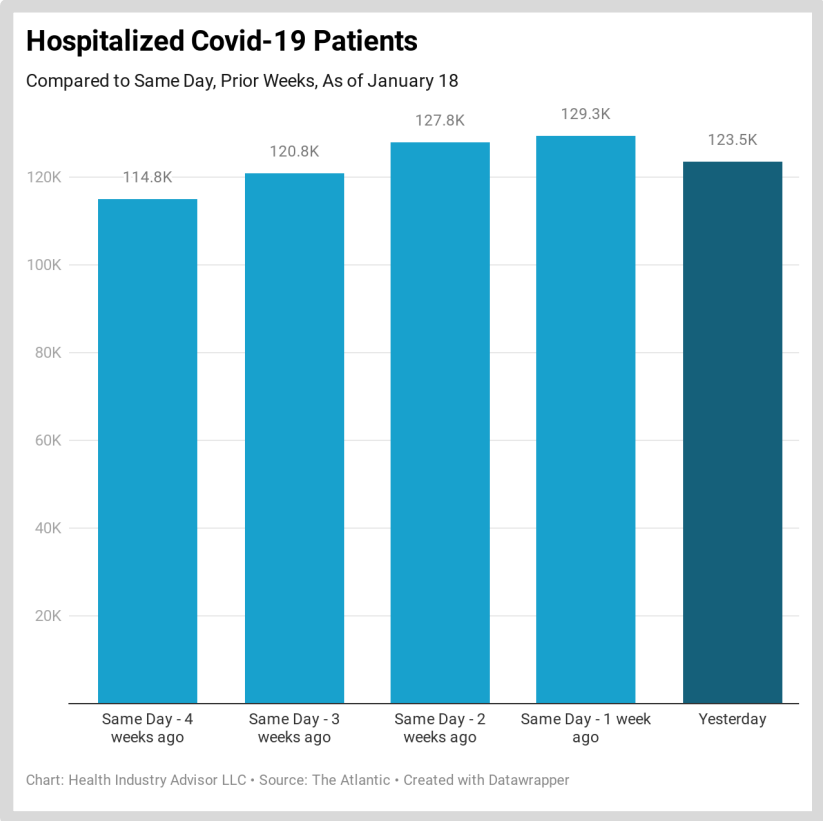
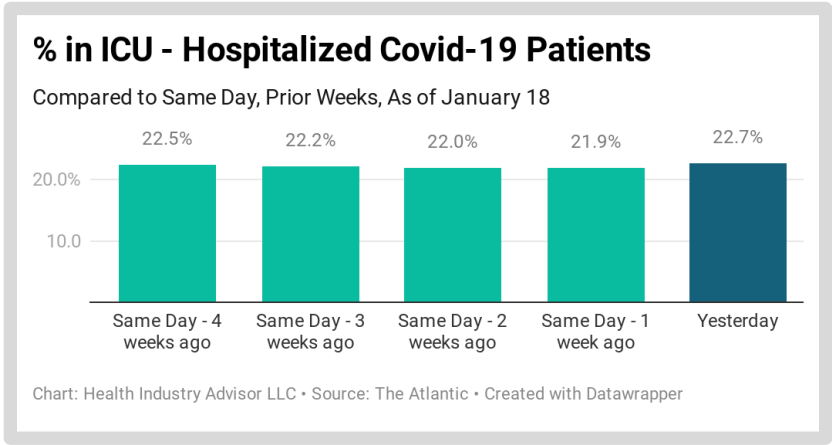
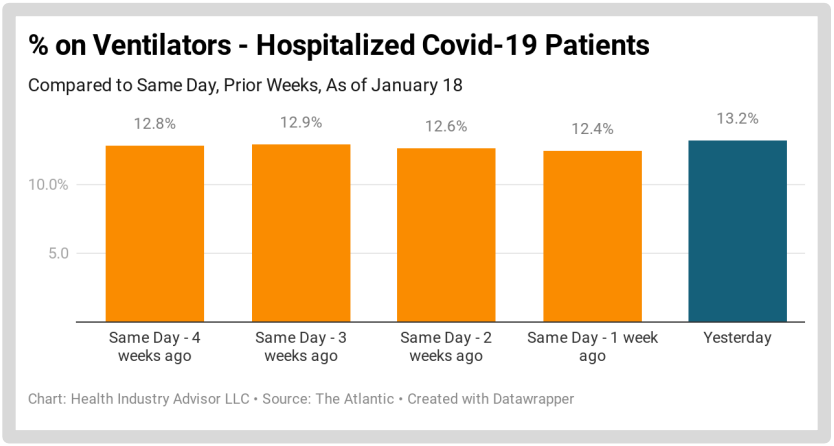
Covid-19 Hospitalizations

While hospitalizations typically decline on the weekends, it is still encouraging that Covid-19 hospitalizations have declined ten of the past twelve days







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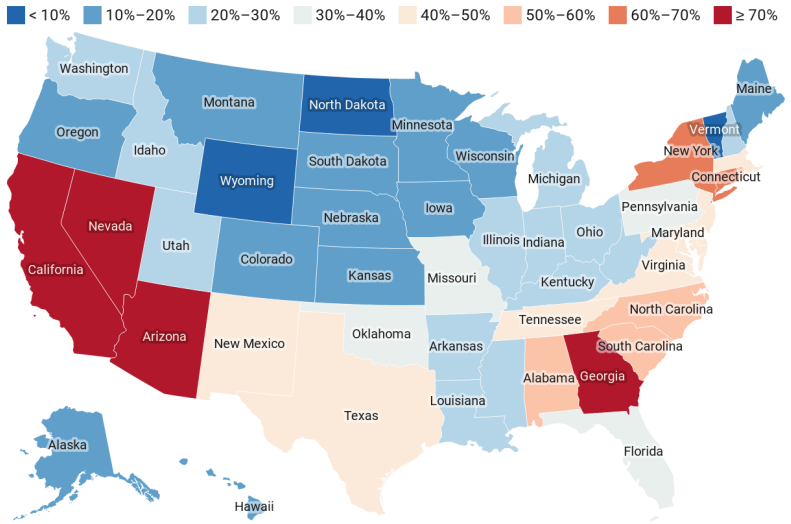
Covid-19 Hospitalizations

The hospitalization rates have shown only subtle improvement in the past week. Rates remain high in Arizona, California, Georgia and Nevada; Connecticut and New York are also of concern

January 11

Covid-19 Patients As % of All Inpatient Beds

As of January 11

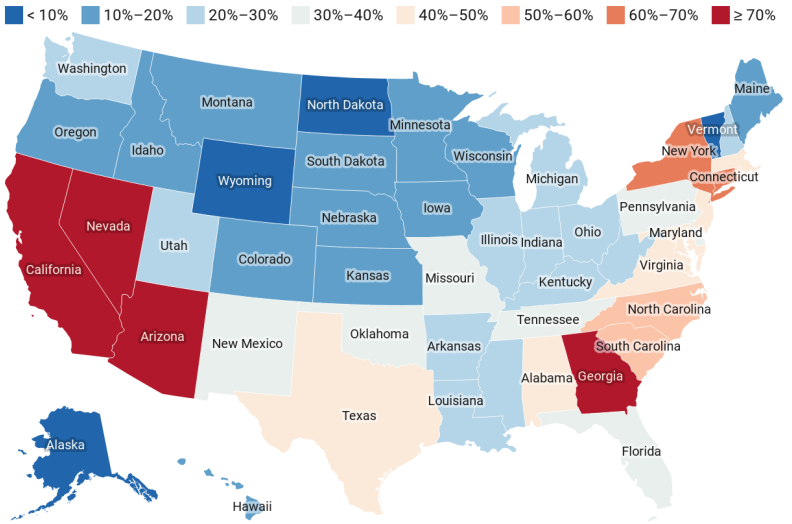


Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

January 18

Covid-19 Patients As % of All Inpatient Beds

As of January 18



Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

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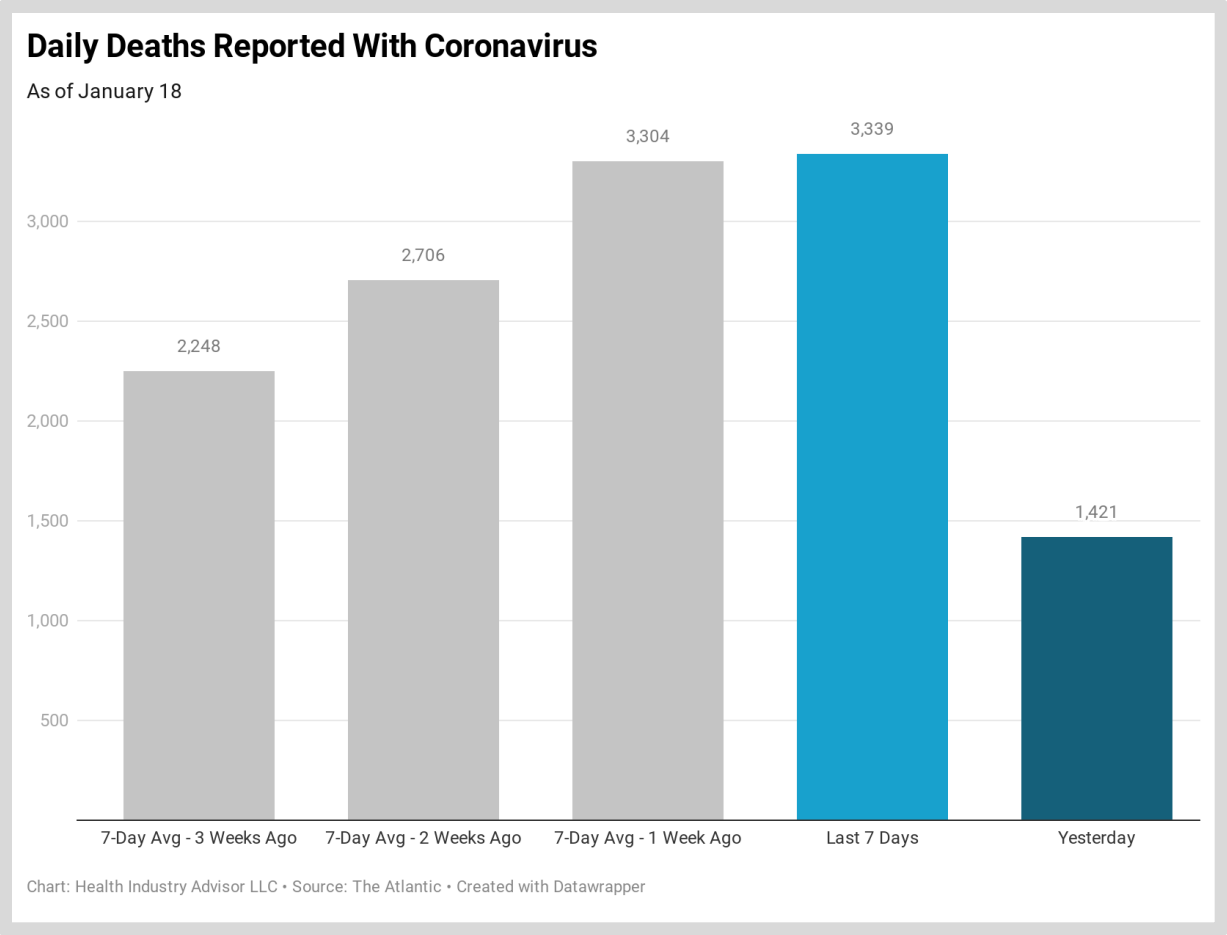
Deaths Reported With Coronavirus

The Martin Luther King holiday likely impacted reporting of deaths with the coronavirus yesterday



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Sources

The following data sources are accessed on a daily or weekly basis

- The Atlantic's Covid Tracking Project: https://covidtracking.com
- Worldometers.info: https://www.worldometers.info/coronavirus/
- Centers for Disease Control and Prevention, National, Regional, and State Level Outpatient Illness and Viral Surveillance https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html
- Centers for Disease Control and Prevention, COVID-19 Laboratory-Confirmed Hospitalizations https://gis.cdc.gov/grasp/COVIDNet/COVID19_5.html
- Centers for Disease Control and Prevention, COVID Data Tracker https://www.cdc.gov/covid-data-tracker/index.html#mobility
- Centers for Disease Control and Prevention, Vaccines, https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html
- Institute for Health Metrics and Evaluation, COVID-19 estimate downloads http://www.healthdata.org/covid/data-downloads
- New York Times, Covid-19 data https://github.com/nytimes/covid-19-data
- COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University https://github.com/CSSEGISandData/COVID-19
- COVID-19 Projections Using Machine Learning, https://covid19-projections.com
- Covid-19 Forecast Hub, https://viz.covid19forecasthub.org
- Oliver Wyman Pandemic Navigator, https://pandemicnavigator.oliverwyman.com/forecast?mode=country&region=United%20States&panel=mortality
- Rt.live
- Yale School of Public Health & Harvard TH Chan School of Public Health, https://covidestim.org
- Bloomberg Vaccine Trackers, https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/?sref=Z0b6TmHW